

What is claimed is:

1. A method of dynamically adapting a PBX network to maintain a Quality of Service level in the network comprising the steps of:
 - identifying a parameter associated with a data packet transported across the network;
 - measuring the parameter; and
 - enabling optimization of the network bandwidth when said measured parameter differs from a predetermined value.
2. Apparatus for dynamically adapting a PBX network to maintain a Quality of Service level in the network comprising:
 - first and second PBX cabinets interconnected in a local area network configuration for sending and receiving data packets;
 - a register in connection with at least one of said cabinets for storing a value associated with a given packet;
 - a comparator for comparing said value with a predetermined value; and
 - an optimization mechanism for adjusting the bandwidth of the network when said measured value differs from a predetermined value.
3. A method of dynamically adapting a PBX network to maintain a Quality of Service level in the network comprising as set forth in claim 1, wherein:
 - said parameter comprises a sequence number associated with the payload portion of said data packet.
4. A method of dynamically adapting a PBX network to maintain a Quality of Service level in the network comprising as set forth in claim 1, wherein:
 - said parameter comprises measurement of the difference in arrival times of packets sent across the network and back between a first packet and a second packet.

5. A method of dynamically adapting a PBX network to maintain a Quality of Service level in the network comprising as set forth in claim 1, wherein:

said parameter comprises measurement of the difference in arrival times of packets sent across the network and back between the average value of arrival times of a group of packets and a second packet.

6. A method of dynamically adapting a PBX network to maintain a Quality of Service level in the network comprising as set forth in claim 3, further comprising the substep of:

storing the sequence numbers of data packets in a register.

7. A method of dynamically adapting a PBX network to maintain a Quality of Service level in the network comprising as set forth in claim 6 further comprising the substep of:

storing sequence numbers associated with successive data packets in the register.

8. A method of dynamically adapting a PBX network to maintain a Quality of Service level in the network comprising as set forth in claim 7 further comprising the substep of:

monitoring the sequence of sequence numbers associated with successive data packets stored.

9. A method of dynamically adapting a PBX network to maintain a Quality of Service level in the network comprising as set forth in claim 8 further comprising the substep of:

incrementing a counter in the register by a count of one when the sequence numbers of successive data packets stored are in sequential order; and

incrementing the counter by a count greater than one when the sequence numbers of successive data packets stored are out of sequential order.

10. A method of dynamically adapting a PBX network to maintain a Quality of Service level in the network comprising as set forth in claim 9, further comprising the substep of:

initiating bandwidth optimization when said counter count is incremented by a count greater than one.

11. A method of dynamically adapting a PBX network to maintain a Quality of Service level in the network comprising as set forth in claim 10, wherein:

said bandwidth optimization comprises static optimization.

12. A method of dynamically adapting a PBX network to maintain a Quality of Service level in the network comprising as set forth in claim 11, wherein:

said static optimization comprises limiting the number of channels available on the network.

13. A method of dynamically adapting a PBX network to maintain a Quality of Service level in the network comprising as set forth in claim 10, wherein:

said bandwidth optimization comprises adaptive optimization.

14. A method of dynamically adapting a PBX network to maintain a Quality of Service level in the network comprising as set forth in claim 13, wherein:

said adaptive optimization comprises the step of determining which channels are physically represented by cards connected to a PBX network cabinet.

15. A method of dynamically adapting a PBX network to maintain a Quality of Service level in the network comprising as set forth in claim 13, wherein:

said adaptive optimization comprises the step of determining whether a channel is inactive and re-mapping an active channel to an available inactive one.

~~16.~~ A method of dynamically adapting a PBX network to maintain a Quality of Service level in the network comprising the steps of:

monitoring the network cards capable of being physically connected to a cabinet;

determining which cards are not present; and

associating channels of a packet with only the cards which are physically present.

17. A method of dynamically adapting a PBX network to maintain a Quality of Service level in the network comprising the steps of:

monitoring channels on a network to determine whether any channels are idle; and

mapping active channels from the end of a packet to an available idle channel.

18. A method of dynamically adapting a PBX network to maintain a Quality of Service level in the network comprising the steps of:

monitoring channels associated with a plurality of network cards;

determining whether all channels in a given card are idle; and

eliminating a card containing associated channels which are all idle from an Internet

Protocol packet.

19. A method of dynamically adapting a PBX network to maintain a Quality of Service level in the network comprising the steps of:

assigning various priorities to a plurality of network cards;

monitoring the status of the network; and

removing a card having the lowest priority in order to optimize the status of the network.

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